PATENT COOPERATION TREATY

PCT

TRANSLATION INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2003P12200WO	FOR FURTHER ACTION	See Form PCT/IPEA/416					
International application No.	International filing date (day/n	nonth/year) Priority date (day/month/year)					
PCT/EP2004/011490	13.10.2004	13.10.2003					
International Patent Classification (IPC) or nat	International Patent Classification (IPC) or national classification and IPC						
F23R3/34, F23R3/36							
Applicant SIEMENS AKTIENGESELLSCHAFT							
	 This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 						
2. This REPORT consists of a total of	5	sheets, including this cover sheet.					
3. This report is also accompanied by A	ANNEXES, comprising:						
a. (sent to the applicant and	l to the International Bureau) a t	otal of 2 sheets, as follows:					
sheets of the descri	sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative						
sheets which super the disclosure in the	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental						
Box.							
b (sent to the International	Bureau only) a total of (indicate	type and number of electronic carrier(s))					
	, containing a sequence listing and/or tables						
related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).							
This report contains indications relat	ing to the following items:						
Box No. I Basis of th	Box No. I Basis of the report						
Box No. II Priority							
Box No. III Non-establ	ishment of opinion with regard to	novelty, inventive step and industrial applicability					
Box No. IV Lack of un	y of invention						
BORTIO. (
Box No. VI Certain do	cuments cited						
Box No. VII Certain de	fects in the international applicati	on					
Box No. VIII Certain ob	servations on the international ap	plication					
Date of submission of the demand	completion of this report						
		- -					
Name and mailing address of the IPEA/EP		zed officer					
Facsimile No.	Telepho	ne No.					

International application No.

PCT/EP2004/011490

Вох	No. I	Basis of the report				
1.		n regard to the language , this report is based on the internaticated under this item.	onal application in the language in	which it was filed, unless otherwise		
		This report is based on translations from the original language which is the language of a translation furnished for the pur		,		
		international search (Rule 12.3 and 23.1(b))				
		publication of the international application (Rule 12.	4)			
		international preliminary examination (Rule 55.2 and				
2.	rece	n regard to the elements of the international application, thi iving Office in response to an invitation under Article 14 a report):				
		the international application as originally filed/furnished				
	\boxtimes	the description:				
		pages _ 1-10		as originally filed/furnished		
		pages*	_ received by this Authority on			
		pages*	_ received by this Authority on			
	\boxtimes	the claims:				
		nos. 4 (in part), 5-9, 13 (in part), 1	4-21	as originally filed/furnished		
		nos.*	as amended (together	with any statement) under Article 19		
		1-3, 4 (in part), 10-12, 13 (in part)	received by this Authority on	09.06.2005 with letter of 24.05.2005		
		nos.*	_ received by this Authority on			
	\boxtimes	the drawings:				
		sheets _ 1/1		as originally filed/furnished		
		sheets*	_ received by this Authority on			
		sheets*	_ received by this Authority on			
		a sequence listing and/or any related table(s) – see Suppler	nental Box Relating to Sequence Li	isting.		
3.		The amendments have resulted in the cancellation of:				
		the description, pages				
		the claims, nos.				
		the descripts shoots/fixe				
		the sequence listing (specify):				
		any table(s) related to sequence listing (specify):				
4.		This report has been established as if (some of) the amer they have been considered to go beyond the disclosure as				
		the description, pages				
		the claims, nos.				
		the drawings, sheets/figs				
		the sequence listing (specify):				
		any table(s) related to sequence listing (specify):				
*	If ite	em 4 applies, some or all of those sheets may be marked "su	perseded."			

International application No.
PCT/EP2004/011490

Box	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement				
1.	Statement				
	Novelty (N)	Claims	1-21	YES	
		Claims		NO	
	Inventive step (IS)	Claims	1-21	YES	
		Claims		NO	
	Industrial applicability (IA)	Claims	1-21	YES	
		Claims		NO	

- 2. Citations and explanations (Rule 70.7)
 - 1. Document EP-A2-1.010.945 (D1), which is considered the closest prior art, discloses a method for the combustion of fuel in the combustion chamber (12) of a gas turbine.

In that method, fuel and combustion air are mixed prior to entry into the combustion chamber (12), avoiding self-ignition (see D1, column 3, lines 8-11).

Furthermore, an enclosed vortex is generated in one or more cavities (40, 42) (see D1, § 9), thereby producing a circulation flow (see D1, figure 1), into which additional fuel is added (see D1, § 11). In addition, as the mixture is ignited in each cavity (see D1, column 5, lines 10 to 12), heating to ignition conditions is guaranteed.

The mixture from the pre-mixing stage (20) is introduced into the combustion chamber such that it mixes with a hot combustion gas flowing from the circulation flow, is heated and is combusted

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

until it exits from the combustion chamber (12) (see D1, column 5, lines 20 to 23).

Since there is sufficient interaction between the two mixtures (the main mixture from the pre-mixing stage and the circulation mixture from the cavity) to allow joint ignition and stabilisation (see US-A1-5.619.855, column 5, lines 49-52, and D1, column 2, lines 18-27), it is unavoidable that parts of each of the two mixtures become incorporated into the other mixture flow.

It is therefore implicitly disclosed that a first part of the main mixture is introduced into the combustion chamber (12) such that it circulates in the vortex flow.

This division of the main mixture is also illustrated in figure 1, in which arrows are used to represent the main mixture, a further arrow shows the flow into the combustion chamber (symbolises the so-called first part of the mixture) and a further arrow is directed into the cavity (symbolises the so-called second part of the mixture).

2. The subject matter of claim 1 differs from that known method in that the second part of the mixture is injected substantially perpendicularly to the flow direction of the flowing hot combustion gas from the circulation flow, mixes therewith, is heated and is combusted until it

International application No.
PCT/EP2004/011490

Box No. V	x No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
	exits from the combustion chamber.		
3.	The subject matter of claim 1 is thus novel (PCT		
	Article 33(2)).		
4.	The current invention can be considered to address		
	the problem of allowing the combustion gas flowing		
	from the circulation flow to thoroughly mix with		
	the first part of the mixture.		
5.	The features of the claim are neither disclosed		
	nor suggested by the prior art.		
6.	The solution to the problem as proposed in claim 1		
	of the present application therefore involves an		
	inventive step (PCT Article 33(3)).		
7.	In view of the above argument, the subject matter		
	of independent claim 12 is also novel and		
	inventive.		
8.	Claims 2-11 and 13-21 are dependent on claims 1		
	and 12 and therefore likewise meet the PCT		
	requirements for novelty and inventive step.		